



2005 – 2016 LONG RANGE PLAN

FOR

WASHINGTON ELECTRIC COOPERATIVE INC.
EAST MONTPELIER, VT

Respectfully submitted,

EPRO Environmental and Engineering
Consulting, LLC

March, 2004

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years will limit WEC's exposure. Any time-based plan is obviously dependent on available resources to complete the work.

4. **New Substations** – The LRP recommends that WEC continue to reconstruct and upgrade its substation facilities based on **condition, age** of equipment and **transformer** loading capacity. The LRP further recommends that WEC include the replacement of at least one substation rebuild in each successive construction work plan. Based on the general condition of each of the existing substation facilities, at this rate of replacement, the last substation to be replaced would be almost 60 years old at the time of replacement.
5. **Vegetation Management** – A plan for maintaining the power-line corridors to reduce service interruptions from tree contact is proposed. Tree contact is the number one cause for service interruptions and vegetation management can provide significant improvements in service reliability.

The estimated costs of all of the recommendations in the LRP are itemized in a spreadsheet located in Attachment F. The cost projections are summarized in Chart 2.

Chart 2 – Summary of Long Range Plan Costs

Categories	Description	Existing 2001-2004 Work Plan	Proposed 2005-2008 Work Plan	Proposed 2009-2012 Work Plan	Proposed 2013-2016 Work Plan
100	New Line-x	\$1,556,285	\$1,676,561	\$1,886,984	\$2,123,817
300,600,700	Distribution Exp	\$4,505,978	\$5,659,435	\$6,992,599	\$7,852,857
400,500	Substation Exp	\$753,000	\$579,391	\$584,875	\$657,939
	Cont In Aid Construction	-\$1,436,645	-\$1,547,675	-\$1,741,921	-\$1,960,548
2001-2004 Original Work Plan		\$5,378,618	\$6,367,712	\$7,722,537	\$8,674,065
Average/ Year		\$1,344,655	\$1,591,928	\$1,930,634	\$2,168,516
Generation*		\$6,500,000			
2001-2004 Amended Work Plan		\$11,878,618			
Average/ Year		\$2,969,655			

* Original Work Plan Amended to Accommodate
Coventry Landfill Project

The 65K fuse at line section 735 could be replaced with a recloser to improve coordination.

Circuit #3

Replace the existing 140 amp L reclosers at the substation with a three-phase recloser with a ground trip setting.

Install a 25 amp recloser at section 718 to improve coordination.

Cutouts

Continue to replace the faulty A.B. Chance cutouts on the circuits.

System Reliability 2005-2016

Fuse Coordination

Continue to implement the fuse coordination recommendations in the 2002 SCS.

Vegetation Management

Circuit #2 experienced considerably more tree related outages than the other two circuits based on the Substation Feeder Performance analysis in the report. It ranked in the upper third of all system circuits over the past 2 ½ years and should be evaluated for increased trimming.

Circuit 3 ranked in the lower middle of all circuits and Circuit 1 ranked at the low end of the scale for tree related events.

Substation Replacement

The East Montpelier Substation is targeted for replacement during the **2009-2012** time period as part of the process of upgrading all of the wood pole substation structures on the system.